

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF CLAIMS:

1-23. (canceled)

24. (currently amended) An information recording medium, comprising:

a first recording layer and a second recording layer in which record information can be alternately recorded in an opposite track path manner,

at least one of said first recording layer and said second recording layer comprising: an anchor area which is to record therein anchor information which is referred to in reading file system information for controlling at least one of recording and reproduction of the record information; and an update area, which update area is different from the anchor area, to update-record therein the anchor information after a recording of a border area is finished, wherein the border area (i) is a recording unit by which the record information is alternately recorded and (ii) includes a first area portion in the first recording layer and a second area portion in the second recording layer whose radius position is substantially same as that of the first area portion,

at least one of said first recording layer and said second recording layer comprises a pointer recording area to record therein four update block sector pointers each of which indicates an address value of the update area in which the anchor information is update-recorded,

at least one of said first recording layer and said second recording layer comprises a flag area to record therein four update block sector effective flags each of which corresponds to respective one of the update block sector pointers and each of which indicates whether or not the anchor information is update-recorded into the update area.

25. (previously presented) The information recording medium according to claim 24, wherein the update area is included in a user area to record therein the record information.

26. (currently amended) The information recording medium according to claim 24, wherein the update area is included in a border management area to manage ~~a~~ the border area ~~which is a recording unit by which the record information is alternately recorded.~~

27. (canceled)

28. (currently amended) The information recording medium according to claim-~~27~~ 24, wherein the pointer recording area is included in a recording management area to manage the recording of the record information.

29. (canceled)

30. (currently amended) The information recording medium according to claim-~~29~~ 24, wherein the flag area is included in a border management area to manage ~~a~~ the border area ~~which is a recording unit by which the record information is alternately recorded.~~

31. (previously presented) The information recording medium according to claim 24, further comprising a position information recording area to record therein position information which indicates a position of the anchor area.

32. (currently amended) An information recording apparatus, comprising:

a recording device for recording record information onto an information recording medium, comprising a first recording layer and a second recording layer in which the record information can be recorded;

a first controlling device for controlling said recording device to record the record information alternately into said first recording layer and said second recording layer in an opposite track path manner;~~and~~

a second controlling device for controlling said recording device to update-record anchor information, which is recorded in anchor area as being a start point in reading file system information for controlling at least one of recording and reproduction of the record information and which is referred to in reading the file system information, into a recording area other than the anchor area of at least one of said first recording layer and said second recording layer as the record information after a recording of a border area is finished, wherein the border area (i) is a recording unit by which the record information is alternately recorded and (ii) includes a first area portion in the first recording layer and a second area portion in the second recording layer whose radius position is substantially same as that of the first area portion;

a third controlling device for controlling said recording device to record four update block sector pointers, each of which indicates an address value of the recording area other than the anchor area in which the anchor information is update-recorded; and

a fourth controlling device for controlling said recording device to record four update block sector effective flags, each of which corresponds to respective one of the update block sector pointers and each of which indicates whether or not the anchor information is update-recorded into the recording area other than the anchor area.

33. (previously presented) The information recording apparatus according to claim 32, wherein said second controlling device controls said recording device to update-record the anchor information into at least one portion of a user data area to record therein the record information.

34. (currently amended) The information recording apparatus according to claim 33, wherein said second controlling device controls said recording device to update-record the anchor information into the at least one portion of the user data area before closing a ~~the~~ border area ~~which is a recording unit by which the record information is alternately recorded.~~

35. (currently amended) The information recording apparatus according to claim 32, wherein said second controlling device controls said recording device to update-record the anchor information into a border management area to manage the ~~a~~-border area ~~which is a recording unit by which the record information is alternately recorded.~~

36. (previously presented) The information recording apparatus according to claim 35, wherein said second controlling device controls said recording device to update-record the anchor information into the border management area in closing the border area.

37. (canceled)

38. (currently amended) The information recording apparatus according to claim ~~37~~ 32, wherein said third controlling device controls said recording device to record the update block sector pointers ~~pointer information~~ into a recording management area to manage the recording of the record information.

39. (currently amended) The information recording apparatus according to claim ~~37~~ 32, wherein

said second controlling device controls said recording device to update-record the anchor information into a recording area which follows a recording area in which the record information is already recorded, in completing the recording of the record information, and

said information recording apparatus further comprises a judging device for judging whether or not the address value indicated by at least one of the update block sector pointers ~~pointer information~~ is equal to an address value of a recording area in which the record information is lastly recorded.

40. (canceled)

41. (currently amended) The information recording apparatus according to claim—~~40~~ 32, wherein said fourth controlling device controls said recording device to record the update block sector effective flags ~~update flag~~ into a border management area to manage ~~a~~ the border area ~~which is a recording unit by which the record information is alternately recorded.~~

42. (currently amended) An information recording apparatus, comprising:

a recording device for recording record information onto an information recording medium, comprising a first recording layer and a second recording layer in which the record information can be recorded;

a first controlling device for controlling said recording device to record the record information alternately into said first recording layer and said second recording layer an opposite track path manner;

an anchor information recording device for recording anchor information which is referred to in reading file system information for controlling at least one of recording and reproduction of the record information;~~and~~

an update-recording device for update-recording therein the anchor information after a recording of a border area is finished, wherein the border area (i) is a recording unit by which the record information is alternately recorded and (ii) includes a first area portion in the first recording layer and a second area portion in the second recording layer whose radius position is substantially same as that of the first area portion;

a third controlling device for controlling said recording device to record four update block sector pointers, each of which indicates an address value of the recording area in which the anchor information is update-recorded; and



a fourth controlling device for controlling said recording device to record four update block sector effective flags, each of which corresponds to respective one of the update block sector pointers and each of which indicates whether or not the anchor information is update-recorded.

43. (currently amended) An information recording method in an information recording apparatus comprising:

a recording device for recording record information onto an information recording medium, comprising a first recording layer and a second recording layer in which the record information can be recorded,

said information recording method comprising:

a first controlling process of controlling said recording device to record the record information alternately into said first recording layer and said second recording layer in an opposite track path manner; and

a second controlling process of controlling said recording device to update-record anchor information, which is recorded into anchor area as being a start point in reading file system information for controlling at least one of recording and reproduction of the record information and which is referred to in reading the file system information, into a recording area other than the anchor area of at least one of said first recording layer and said second recording layer as the record information after a recording of a border area is finished, wherein the border area (i) is a recording unit by which the record information is alternately recorded and (ii) includes a first area portion in the first recording layer and a second area portion in the second recording layer whose radius position is substantially same as that of the first area portion;

a third controlling process of controlling said recording device to record four update block sector pointers, each of which indicates an address value of the recording area other than the anchor area in which the anchor information is update-recorded; and

a fourth controlling process of controlling said recording device to record four update block sector effective flags, each of which corresponds to respective one of the update block sector pointers and each of which indicates whether or not the anchor information is update-recorded into the recording area other than the anchor area.

44. (currently amended) An information reproducing apparatus for reproducing the record information recorded on said information recording medium by said information recording apparatus comprising: a recording device for recording record information onto an information recording medium, comprising a first recording layer and a second recording layer in which the record information can be recorded; a first controlling device for controlling said recording device to record the record information alternately into said first recording layer and said second recording layer in an opposite track path manner; and a second controlling device for controlling said recording device to update- record anchor information, which is recorded in anchor area as being a start point in reading file system information for controlling at least one of recording and reproduction of the record information and which is referred to in reading the file system information, into a recording area other than the anchor area of at least one of said first recording layer and said second recording layer as the record information after a recording of a border area is finished, wherein the border area (i) is a recording unit by which the record information is alternately recorded and (ii) includes a first area portion in the first recording layer and a second area portion in the second recording layer whose radius position is substantially same as that of the first area portion; a third controlling device for

controlling said recording device to record four update block sector pointers, each of which indicates an address value of the recording area other than the anchor area in which the anchor information is update-recorded; and a fourth controlling device for controlling said recording device to record four update block sector effective flags, each of which corresponds to respective one of the update block sector pointers and each of which indicates whether or not the anchor information is update-recorded into the recording area other than the anchor area,

said information reproducing apparatus comprising:

a first reading device for reading the anchor information which is recorded in the anchor area or which is update-recorded into the recording area other than the anchor area of at least one of said first recording layer and said second recording layer;

a second reading device for reading the file system information on the basis of the read anchor information; and

a reproducing device for reproducing the record information on the basis of the read file system information.

45. (currently amended) An information reproducing apparatus for reproducing the record information recorded on said information recording medium by said information recording apparatus comprising: a recording device for recording record information onto an information recording medium, comprising a

first recording layer and a second recording layer in which the record information can be recorded; a first controlling device for controlling said recording device to record the record information alternately into said first recording layer and said second recording layer in an opposite track path manner; an anchor information recording device for recording anchor information which is referred to in reading file system information for controlling at least one of recording and reproduction of the record information; ~~and~~ an update-recording device for update-recording therein the anchor information after a recording of a border area is finished, wherein the border area (i) is a recording unit by which the record information is alternately recorded and (ii) includes a first area portion in the first recording layer and a second area portion in the second recording layer whose radius position is substantially same as that of the first area portion; a third controlling device for controlling said recording device to record four update block sector pointers, each of which indicates an address value of the recording area in which the anchor information is update-recorded; and a fourth controlling device for controlling said recording device to record four update block sector effective flags, each of which corresponds to respective one of the update block sector pointers and each of which indicates whether or not the anchor information is update-recorded,

said information reproducing apparatus comprising:

a first reading device for reading the anchor information which is recorded in the anchor area or which is update-recorded into the recording area other than the anchor area of at least one of said first recording layer and said second recording layer;

a second reading device for reading the file system information on the basis of the read anchor information; and

a reproducing device for reproducing the record information on the basis of the read file system information.

46. (currently amended) An information reproducing apparatus for reproducing record information recorded on an information recording medium comprising: a first recording layer and a second recording layer in which record information can be alternately recorded in an opposite track path manner, at least one of said first recording layer and said second recording layer comprising: an anchor area which is to record therein anchor information which is referred to in reading file system information for controlling at least one of recording and reproduction of the record information; and an update area to update-record therein the anchor information after a recording of a border area is finished, wherein the border area (i) is a recording unit by which the record information is alternately recorded and (ii) includes a first area portion in the first recording layer and a second area portion in the second recording

layer whose radius position is substantially same as that of the first area portion, at least one of said first recording layer and said second recording layer comprises a pointer recording area to record therein four update block sector pointers each of which indicates an address value of the update area in which the anchor information is update-recorded, at least one of said first recording layer and said second recording layer comprises a flag area to record therein four update block sector effective flags each of which corresponds to respective one of the update block sector pointers and each of which indicates whether or not the anchor information is update-recorded into the update area,

said information reproducing apparatus comprising:

a first reading device for reading anchor information which is recorded in the anchor area or the update area; and

a reproducing device for reproducing the record information on the basis of the read anchor information.

47. (currently amended) An information reproducing method of reproducing the record information recorded on said information recording medium by said information recording apparatus comprising: a recording device for recording record information onto an information recording medium, comprising a first recording layer and a second recording layer in which the record information can be recorded; a first controlling device for controlling said recording device to record the record

information alternately into said first recording layer and said second recording layer in an opposite track path manner; and a second controlling device for controlling said recording device to update- record anchor information, which is recorded in anchor area as being a start point in reading file system information for controlling at least one of recording and reproduction of the record information and which is referred to in reading the file system information, into a recording area other than the anchor area of at least one of said first recording layer and said second recording layer as the record information after a recording of a border area is finished, wherein the border area (i) is a recording unit by which the record information is alternately recorded and (ii) includes a first area portion in the first recording layer and a second area portion in the second recording layer whose radius position is substantially same as that of the first area portion; a third controlling device for controlling said recording device to record four update block sector pointers, each of which indicates an address value of the recording area other than the anchor area in which the anchor information is update-recorded; and a fourth controlling device for controlling said recording device to record four update block sector effective flags, each of which corresponds to respective one of the update block sector pointers and each of which indicates whether or not the anchor information is update-recorded into the recording area other than the anchor area,



said information reproducing method comprising:

a first reading process of reading the anchor information which is recorded in the anchor area or which is update-recorded into the recording area other than the anchor area of at least one of said first recording layer and said second recording layer;

a second reading process of reading the file system information on the basis of the read anchor information; and

a reproducing process of reproducing the record information on the basis of the read file system information.

48. (currently amended) An information reproducing method of reproducing the record information recorded on said information recording medium by said information recording apparatus comprising: a recording device for recording record information onto an information recording medium, comprising a first recording layer and a second recording layer in which the record information can be recorded; a first controlling device for controlling said recording device to record the record information alternately into said first recording layer and said second recording layer in an opposite track path manner; an anchor information recording device for recording anchor information which is referred to in reading file system information for controlling at least one of recording and reproduction of the record information; ~~and~~ an update-recording

device for update-recording therein the anchor information after a recording of a border area is finished, wherein the border area (i) is a recording unit by which the record information is alternately recorded and (ii) includes a first area portion in the first recording layer and a second area portion in the second recording layer whose radius position is substantially same as that of the first area portion; a third controlling device for controlling said recording device to record four update block sector pointers, each of which indicates an address value of the recording area in which the anchor information is update-recorded; and a fourth controlling device for controlling said recording device to record four update block sector effective flags, each of which corresponds to respective one of the update block sector pointers and each of which indicates whether or not the anchor information is update-recorded,

said information reproducing method comprising:

a first reading process of reading the anchor information which is recorded in the anchor area or which is update-recorded into the recording area other than the anchor area of at least one of said first recording layer and said second recording layer;

a second reading process of reading the file system information on the basis of the read anchor information; and

a reproducing process of reproducing the record information on the basis of the read file system information.

49. (currently amended) A computer program product in a computer-readable medium for tangibly embodying a program of instructions executable a computer provided for the information recording apparatus, said computer program making the computer function as at least one portion of first controlling device, ~~and~~ second controlling device, a third controlling device and a fourth controlling device,

said information recording apparatus, comprising:

a recording device for recording record information onto an information recording medium, comprising a first recording layer and a second recording layer in which the record information can be recorded;

said first controlling device for controlling said recording device to record the record information alternately into said first recording layer and said second recording layer in an opposite track path manner; ~~and~~

said second controlling device for controlling said recording device to update- record anchor information, which is recorded in anchor area as being a start point in reading file system information for controlling at least one of recording and reproduction of the record information and which is referred to in reading the file system information, into a recording area other than the anchor area of at least one of said first recording layer and said second recording layer as the record

information after a recording of a border area is finished,  
wherein the border area (i) is a recording unit by which the  
record information is alternately recorded and (ii) includes a  
first area portion in the first recording layer and a second area  
portion in the second recording layer whose radius position is  
substantially same as that of the first area portion;

said third controlling device for controlling said  
recording device to record four update block sector pointers,  
each of which indicates an address value of the recording area  
other than the anchor area in which the anchor information is  
update-recorded; and

said fourth controlling device for controlling said  
recording device to record four update block sector effective  
flags, each of which corresponds to respective one of the update  
block sector pointers and each of which indicates whether or not  
the anchor information is update-recorded into the recording area  
other than the anchor area.

50. (currently amended) A computer program product in  
a computer-readable medium for tangibly embodying a program of  
instructions executable by a computer provided for the  
information recording apparatus, said computer program making the  
computer function as at least one portion of said first  
controlling device, said anchor information recording device, and

said update-recording device, said third controlling device and  
said fourth controlling device,

an information recording apparatus, comprising:

a recording device for recording record information  
onto an information recording medium, comprising a first  
recording layer and a second recording layer in which the record  
information can be recorded;

said first controlling device for controlling said  
recording device to record the record information alternately  
into said first recording layer and said second recording layer  
in an opposite track path manner;

said anchor information recording device for recording  
anchor information which is referred to in reading file system  
information for controlling at least one of recording and  
reproduction of the record information; ~~and~~

said update-recording device for update-recording  
therein the anchor information after a recording of a border area  
is finished, wherein the border area (i) is a recording unit by  
which the record information is alternately recorded and (ii)  
includes a first area portion in the first recording layer and a  
second area portion in the second recording layer whose radius  
position is substantially same as that of the first area portion;

said third controlling device for controlling said recording device to record four update block sector pointers, each of which indicates an address value of the recording area in which the anchor information is update-recorded; and

said fourth controlling device for controlling said recording device to record four update block sector effective flags, each of which corresponds to respective one of the update block sector pointers and each of which indicates whether or not the anchor information is update-recorded.

51. (currently amended) A computer program product in a computer-readable medium for tangibly embodying a program of instructions executable by a computer provided for the information reproducing apparatus, said computer program making the computer function as at least one portion of first reading device, second reading device and reproducing device,

said information reproducing apparatus for reproducing the record information recorded on said information recording medium by said information recording apparatus comprising: a recording device for recording record information onto an information recording medium, comprising a first recording layer and a second recording layer in which the record information can be recorded; a first controlling device for controlling said recording device to record the record information alternately into said first recording layer and said second recording layer

in an opposite track path manner; and a second controlling device for controlling said recording device to update- record anchor information, which is recorded in anchor area as being a start point in reading file system information for controlling at least one of recording and reproduction of the record information and which is referred to in reading the file system information, into a recording area other than the anchor area of at least one of said first recording layer and said second recording layer as the record information after a recording of a border area is finished, wherein the border area (i) is a recording unit by which the record information is alternately recorded and (ii) includes a first area portion in the first recording layer and a second area portion in the second recording layer whose radius position is substantially same as that of the first area portion; a third controlling device for controlling said recording device to record four update block sector pointers, each of which indicates an address value of the recording area other than the anchor area in which the anchor information is update-recorded; and a fourth controlling device for controlling said recording device to record four update block sector effective flags, each of which corresponds to respective one of the update block sector pointers and each of which indicates whether or not the anchor information is update-recorded into the recording area other than the anchor area,

said information reproducing apparatus comprising:

a first reading device for reading the anchor information which is recorded in the anchor area or which is update-recorded into the recording area other than the anchor area of at least one of said first recording layer and said second recording layer;

a second reading device for reading the file system information on the basis of the read anchor information; and

a reproducing device for reproducing the record information on the basis of the read file system information.

52. (currently amended) A computer program product in a computer-readable medium for tangibly embodying a program of instructions executable by a computer provided for the information reproducing apparatus, said computer program making the computer function as at least one portion of a first reading device, a second reading device and a reproducing device,

said information reproducing apparatus for reproducing the record information recorded on said information recording medium by said information recording apparatus comprising: a recording device for recording record information onto an information recording medium, comprising a first recording layer and a second recording layer in which the record information can be recorded; a first controlling device for controlling said recording device to record the record information alternately into said first recording layer and said second recording layer



in an opposite track path manner; an anchor information recording device for recording anchor information which is referred to in reading file system information for controlling at least one of recording and reproduction of the record information; ~~and~~ an update-recording device for update-recording therein the anchor information after a recording of a border area is finished, wherein the border area (i) is a recording unit by which the record information is alternately recorded and (ii) includes a first area portion in the first recording layer and a second area portion in the second recording layer whose radius position is substantially same as that of the first area portion; a third controlling device for controlling said recording device to record four update block sector pointers, each of which indicates an address value of the recording area in which the anchor information is update-recorded; and a fourth controlling device for controlling said recording device to record four update block sector effective flags, each of which corresponds to respective one of the update block sector pointers and each of which indicates whether or not the anchor information is update-recorded,

said information reproducing apparatus comprising:

a first reading device for reading the anchor information which is recorded in the anchor area or which is update-recorded into the recording area other than the anchor

area of at least one of said first recording layer and said second recording layer;

a second reading device for reading the file system information on the basis of the read anchor information; and

a reproducing device for reproducing the record information on the basis of the read file system information.

53. (currently amended) A computer program product in a computer-readable medium for tangibly embodying a program of instructions executable by a computer provided for the information reproducing apparatus, said computer program making the computer function as at least one portion of said first reading device and said reproducing device,

information reproducing apparatus for reproducing record information recorded on an information recording medium comprising: a first recording layer and a second recording layer in which record information can be alternately recorded in an opposite track path manner, at least one of said first recording layer and said second recording layer comprising: an anchor area which is to record therein anchor information which is referred to in reading file system information for controlling at least one of recording and reproduction of the record information; and an update area to update-record therein the anchor information after a recording of a border area is finished, wherein the border area (i) is a recording unit by which the record

information is alternately recorded and (ii) includes a first area portion in the first recording layer and a second area portion in the second recording layer whose radius position is substantially same as that of the first area portion, at least one of said first recording layer and said second recording layer comprises a pointer recording area to record therein four update block sector pointers each of which indicates an address value of the update area in which the anchor information is update-recorded, at least one of said first recording layer and said second recording layer comprises a flag area to record therein four update block sector effective flags each of which corresponds to respective one of the update block sector pointers and each of which indicates whether or not the anchor information is update-recorded into the update area,

said information reproducing apparatus comprising:

said first reading device for reading anchor information which is recorded in the anchor area or the update area; and

said reproducing device for reproducing the record information on the basis of the read anchor information.